



Multigated Acquisition (MUGA or Radionuclide-Angiogram-RNA Scan)

You are scheduled for a MUGA scan (also known as a radionuclide angiogram). It is a type of heart scan. For this test, a small amount of radioactive material will be injected into a vein in your arm. With the aid of a computer and a special camera sensitive to this radioactivity, pictures can be taken of your heart.

The MUGA can tell your doctor several things about your heart: how well your ventricles are working, specifically how well your left ventricle pumps blood (the ejection fraction), and how blood flows inside your heart.

You may be scanned during rest, or during rest and exercise.

- Preparation:**
- Wear loose, comfortable clothing, or pajamas with pants. A shirt or gown that opens in the front is also helpful. (This allows electrodes to be placed on your chest.) Women may wear a bra. If exercise is planned, wear well-fitting exercise shoes.
 - If you are having only a MUGA, you may eat a light breakfast. But if a thallium stress test is also scheduled, do not eat breakfast.
 - You will want to feel your best before this test, so if you have been short of breath, light-headed, tired, or have had chest discomfort, tell your nurse.
- Procedure:**
- Two injections will be given to you through your vein. The first (which contains phosphate) prepares the blood for testing. Fifteen to twenty minutes later, a small amount of radioactive material (radionuclide technetium 99m) will be injected.
 - You will be asked to lie on a flat, imaging table.
 - Electrodes will be placed on your chest, and a special camera will be positioned over your chest. As the camera takes pictures of your heart, you will be asked to stay still and breathe normally.
 - If an exercise study is planned, you will lie flat on the imaging table while your feet are slipped into bicycle pedals. Shoulder supports will help position you, as well. When the camera is placed over your chest, you will be asked to begin pedaling. A doctor will be present

for this part of the test. Every 2 minutes, pedaling will become a little harder, but you must try to keep a steady pace. When you reach the hardest level (the last few minutes), a 2- to 3-minute picture of your heart will be taken. This picture is the reason for the test, so if you need to stop pedaling, please tell the doctor at least 2 minutes before you stop.

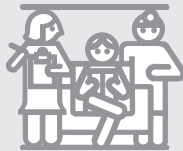
- The test lasts about 1 hour. If exercise is done, it will take about 2 hours.

**After the
Procedure:**

If you have questions about the procedure, please ask. Your nurse and doctor are ready to assist you at all times.

**Special
Instructions:**

- Report any symptoms such as chest discomfort, shortness of breath, heart palpitations, or light-headedness, to the staff of the Nuclear Medicine Department.
- Because it uses radioactivity, this test is not performed in pregnant women. *If you are pregnant or think you might be pregnant, please inform your doctor immediately so that a decision can be made about this test.*
- *Also, please inform your doctor immediately if you are breast-feeding.* Some tests can be performed in breast-feeding women if they are willing to stop breast-feeding for a while.



3/00

This information is prepared specifically for patients participating in clinical research at the Warren Grant Magnuson Clinical Center at the National Institutes of Health and is not necessarily applicable to individuals who are patients elsewhere. If you have questions about the information presented here, talk to a member of your healthcare team.

Questions about the Clinical Center? OCCC@cc.nih.gov

Where applicable, brand names of commercial products are provided only as illustrative examples of acceptable products, and do not imply endorsement by NIH; nor does the fact that a particular brand name product is not identified imply that such product is unsatisfactory.

National Institutes of Health
Warren Grant Magnuson Clinical Center
Bethesda, Maryland 20892